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ABSTRACT

Using data from the national research project "A Study of Schooling," researchers sought to describe teachers' educational beliefs and to relate those beliefs to the teachers' classroom teaching practices. From 13 elementary schools in the national survey, 182 teachers were selected, based on their scores on two dimensions of belief: teacher discipline and control, and student participation. The two dimensions yielded four types of teachers, including (1) "autocrats," with high discipline and low participation scores; (2) "strategists," with high discipline and participation scores; (3) "laissez-faire," with low discipline and participation scores; and (4) "democrats," with low discipline but high participation scores. Questionnaires, interviews, and observations of 80 classrooms where the sampled teachers taught were used to assess teaching practices. The variables examined included teachers' "preactive" behaviors (goals, intentions, and decisions) and "interactive" behaviors (instructional methods, grouping arrangements, time use, leadership, and expressive behavior). Discriminant analysis and chi-square analysis indicated that the four teacher types had different goals and methods. Among the results were that autocrats and strategists tended to emphasize basic skills and intellectual development, while democrats emphasized personal development, and that teacher beliefs on discipline were associated mostly with preactive behavior and beliefs on participation mostly with interactive behavior. (Author/RW)

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# PREDICTING ELEMENTARY CLASSROOM TEACHING PRACTICES FROM TEACHERS' EDUCATIONAL BELIEFS

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This paper is based on a longer report entitled "Relationships Between a Typology of Teacher Educational Beliefs and Three Domains of the Elementary Classroom Curriculum," Technical Report No. 34 available from the Laboratory in School and Community Education, University of California, Los Angeles, 90024.

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EA 015 364

ABSTRACT

"Predicting Elementary Classroom Teaching Practices From Teachers' Educational Beliefs"

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This study used data collected for a national research project, A Study of Schooling, to investigate the possible relationships between elementary school teachers' educational beliefs and their classroom teaching practices. This was done from three perspectives representing three domains of the classroom curriculum -- the instructional (teacher's perspective), the operational (observer's perspective), and the experiential (students' perspectives). A typology of teacher educational belief types was developed. Teacher groups were described as autocrats, strategists, laissez-faires, and democrats based on scores representing two belief dimensions -- teacher discipline and control and student participation. Classroom process variables were then selected for comparison with the four teacher belief types. The investigation focused on how teacher belief types differed in their preactive behaviors (i.e., goals, intentions, decisions) and their interactive behaviors (i.e., methods of instruction, grouping arrangements, use of time, leadership, and expressive behaviors). Theoretical propositions taken from the body of work on teacher effectiveness were used to guide both the formulation of research questions and in the interpretation of findings. Discriminant analysis was the primary analytic tool used to determine whether differences obtained among teacher belief types in the variables studied and to explain the direction of the differences found. The findings of this study support the notion that teachers' educational beliefs have a distinct bearing on their teaching behaviors and thereby on their teaching effectiveness.

This study had two main purposes: 1) to describe some of the variety of beliefs teachers hold about teaching and learning in elementary school classrooms, and 2) to explore possible relationships between a typology of teachers' educational beliefs and their classroom teaching practices.

The importance of the teacher's role in the classroom cannot be underestimated. Teachers consider themselves to have have authority, influence and responsibility for what goes on in their classrooms, including curricular decision making although the issue of teacher autonomy is tangled and complex (Lortie, 1969; Taylor, 1975; Wright, 1980). Indeed, without the considerable right, legitimate or otherwise, to influence what their students learn and how they choose to teach them, teachers would not have a meaningful identity. However, many teachers are not fully aware of their own influence nor of the nature of the differences in teaching practice that result--differences that prevail from one classroom to another, often within the same school. For much of their working lives teachers remain remarkably isolated from the direct influence of other members of the profession. Elementary classrooms, in particular, are generally very active places engaging the constant attention, if not active participation, of teachers at all times. A teacher rarely sees other teachers teaching or is seen teaching by other teachers. Likewise, many teachers rarely have an opportunity, or even the skills, to reflect on their own teaching practices, to articulate their assumptions about teaching and learning, and to examine both in light of their educational beliefs.

One important intent of this research, therefore, is to provide a portrait of teacher belief types from the descriptions of the 80 classrooms where observations were carried out, interviews conducted, and questionnaires answered. This portrait may potentially enable teachers to reflect on their own educational beliefs and on their own teaching practices in a way which up to

now has not been possible. Similarly, it should allow those who train teachers a means of bridging the gap between research and practice by providing precise and detailed information about teachers' educational beliefs and their association with the internal life of the elementary school classroom.

Many studies have attempted to relate classroom teaching practices to teachers' educational beliefs (e.g. Kerlinger, 1954; Wehling and Charters, 1969; Harvey et al, 1968; Willower, 1975). These studies have consistently shown that classroom practices differ for teachers whose educational beliefs differ. Generally, belief differences are described or illustrated dichotomously or along a continuum. For example, teachers who score high on a belief dimension such as humanistic-orientation (Willower) score low on its opposite, that is, custodial-orientation. Numerous studies by Harvey and his associates found that teachers high on open-mindedness were more flexible in their teaching behaviors than were close-minded teachers. Unfortunately, studies of teaching style result in the application of global or poorly defined terms to the teaching act usually unrelated to a theoretical perspective. Thus, teaching is defined along a single dimension from dominative to integrative (Anderson, 1943), teacher-centered to student-centered (Rogers, 1951), directive to non-directive (Ashmu, and Haigh, 1952), direct to indirect (Flanders, 1965), formal to informal (Bennett, 1976) and so on. The work of these researchers and others helps to perpetuate an old assumption, that is, that traditional and progressive teaching methods or authoritarian and democratic ways of thinking are mutually exclusive or are incompatible with one another rather than merged in some teachers' ways of thinking and behaving. Likewise, this work does not directly challenge teachers to justify their teaching practices in light of their beliefs. At present we do not know why practices emerge in the particular forms they do; why, for example, a greater variety of teaching practices is

more commonly found among open-minded and humanistic-oriented teachers than among close-minded and custodial-oriented teachers nor what effect this might have on student learning. The current research lacks a conceptual model to guide it past its current one-dimensional focus. By proposing and testing multi-dimensional conceptual models for variations in educational beliefs, such as this study intended to do, a more precise understanding of observed practices and their associations with teachers' educational beliefs can be had.

## METHOD

### Participants

The study was conducted with teachers and students participating in a national research project, A Study of Schooling, under the direction of John I. Goodlad. The sample for this study of relationships between teachers' educational beliefs and their teaching practices was drawn from the 286 elementary teachers included in A Study of Schooling sample. The scores they obtained on a set of teacher educational belief items representing two belief dimensions--teacher discipline and control and student participation--became the selection criteria for this study. In order to obtain teachers with relatively different ideological orientations, teachers who scored close to the mean were eliminated. Thus, 182 teachers remained in the study of which 72 were early elementary classroom teachers (grades 1-3) and 57 were upper elementary classroom teachers (grades 4-6). These teachers were distributed across all 13 elementary schools included in the national sample. Observation data from a total of 80 classrooms of these teachers were analyzed along with survey data and teacher interview responses. The schools from which the classrooms and their teachers were drawn represented different combinations of the following characteristics: school size, economic level, racial composition, location (urban-suburban-rural), and region of the country (Table 1).

Using scales drawn mainly from the work of Kerlinger (1954), the teachers were assigned to respective educational belief types on the basis of their scores on teacher control and student participation. Although the distributions on both scales were negatively skewed, four separate groups of teacher belief-types could be identified according to these two ideological orientations (see Figure 1). Those who scored high on teacher control and low on student participation were classified as "autocrats." Those who scored high or low on both dimensions were classified as "strategists" or "laissez-faires," respectively. Those who scored low on teacher control and high on participation were classified as "democrats" (see Figure 2). The actual meaning of the adjectives used to label the belief types is necessarily somewhat different from what the same terms usually mean in political, economic and other social contexts. While these same labels have been applied in other classroom studies and have different meanings there, no confusion will result if the constructs operationally defined by the scales used in the Educational Beliefs Inventory for this study are kept in mind.

Description of the Educational Belief Dimensions

Descriptive information concerning the dimensions on which educational beliefs differed was obtained from the work of Wehling and Charters (1969) and that of Bishop (1972). To their interpretations of these dimensions were added the author's own insights obtained from elementary classroom teaching experience and background in teacher education. The seven items comprising the teacher discipline and control scale and the five items comprising the student participation scale are as follows:

Teacher Discipline and Control

- Good teacher-student relations are enhanced when it is clear that the teacher, not the students, is in charge of classroom activities.
- There is too great an emphasis on keeping order in most classrooms.

- o An orderly classroom is the major prerequisite to effective teaching.
- o Students must be kept busy or they soon get into trouble.
- o Students need and should have more supervision than they usually get.
- o In the interest of good discipline, students who repeatedly disrupt the class must be firmly punished.
- o Proper control of a class is amply demonstrated when the students work quietly while the teacher is out of the room.

Student Participation

- o Student initiation and participation in planning classroom activities are essential to the maintenance of an effective classroom atmosphere.
- o When students are allowed to participate in the choice of activities, discipline problems are generally averted.
- o When given a choice of activities, most students select what is best for them.
- o Student motivation is greatest when students can gauge their own progress rather than depending on regular evaluation by the teacher.
- o Students are motivated to do better work when they feel free to move around the room while class is in session.

The following brief descriptions of the two dimensions of teachers' educational beliefs are supported by the above items.

Teacher discipline and control. The best learning situation is one in which there is a high degree of order and decorum in the classroom. This dimension expresses the teacher's belief in conducting the class according to established rules and procedures, quick punishment for those who depart from rules, and the elimination of nonsense, noise and distractions. Furthermore, to assure maximum learning, the teacher must be the one to guide and direct the flow of instructional events rather than the student. In a sense, it appears to reflect a fundamental personality disposition in teachers rather than a purely instrumental belief regarding instructional practices.

Student participation. Students will be motivated to do better work when they are accorded substantial autonomy and freedom from teacher direction.

This dimension reflects the teacher's belief in promoting student initiative and participation in the choice of learning activities. Furthermore, student discipline and behavior problems will be lessened when students are involved in the planning and evaluation of their own progress. In a sense, it expresses the amount of faith the teacher has in students and their capacity for making useful instructional decisions.

Assessment of Teaching Practices

Three bodies of data were used to assess classroom teaching practices as perceived by teachers and outside observers--questionnaires, interviews and observation schedules. It is assumed that a consensus of perspectives brought to bear on classroom teaching activities constitutes a measure of those activities. The Teacher Inventory consists of 25 items which fall into five sets of variables, each of which measures the emphasis on one aspect of teaching practice. The Goals of Schooling variables assess teachers' views of the purposes of schooling, or the role of the school in educating the student. The Teacher Decision Making variables assess dimensions related to how teachers make curriculum decisions while planning and organizing for instruction. The final sets of variables from the Teacher Inventory--Methods of Instruction, Grouping Arrangements and Use of Time--assess the way in which teachers perceive their own classroom functioning while instructing students.

The extent to which teachers desire certain specific kinds of academic and behavioral learnings or educational objectives for their students was assessed with data from the Teacher Interview Schedule.

Finally, the classroom observation data, utilizing 21 variable subsets, provided three measures used to assess the extent to which certain classroom practices were operationalized in the classroom. These were: Methods of Instruction, Grouping Arrangements and Use of Time. In addition, data from the

classroom observation instrument were used to assess the extent to which classroom leadership (Leadership Behavior) was exercised by teachers and students and the affective quality of classroom interactions (Expressive Behavior). (See Table 2 for brief descriptions of the variable sets.)

Further details about the development of these variable sets, the subscales included in them, and their correlations are provided in Sirotnik (1979) and Bauch (1982). Briefly, the variables measure distinct, albeit moderately correlated, aspects of teaching practice. Each of the sets of variables, with the exception of the Expressive Behavior variables and the Use of Time variables reported from the Teacher Survey and from the classroom observation schedules, significantly discriminates among teacher belief types. Internal consistencies and profile stability are quite high.

Predictions Regarding the Four Educational Belief Types

Briefly, the expected behaviors of the four ideal belief types can be characterized as follows:

| Autocrats | Strategists |
|---|---|
| 1.High behavioral and curricular control | High behavioral and curricular control |
| 2. Low stimulation of group processes | High stimulation of group processes |
| **Laissez-faires** | **Democrats** |
| 1.Low behavioral and curricular control | Low behavioral and curricular control |
| 2. Low stimulation of group processes | High stimulation of group processes |

Method of Analysis

Discriminant analysis was used as the primary analytic tool in exploring the relationship between teachers' educational beliefs and their classroom teaching practices. This analysis successfully measures the extent to which variables discriminate among groups of cases and provides an efficient basis for explaining the nature of group differences. Eleven discriminant analyses

and one chi square analysis (used to assess student-intended behavioral goals from the interview data) were performed on the variable sets. Instead of conducting one large multivariate analysis, considerable clarity was achieved by treating the eleven conceptually distinct sets of variables separately. For each of the discriminant analyses, because differences among four groups were considered, three discriminating functions were possible. However, only those discriminating functions that contributed significantly to separation among groups, and then, only the first function since in all cases it accounted for the majority proportion of variance, is being considered here.

A word is in order regarding the issue of statistical significance. Although a considerable number of teachers and classes were available for analysis, the cases used in this study were not an independent, simple random sample required in the strict mathematical sense for the use of tests for statistical inference. Consequently, the test of significance does not apply here under a strict interpretation of the underlying assumptions. Nevertheless, in view of the exploratory nature of this study, such tests can be of heuristic value, and it is in this spirit that they are reported. Moreover, for the purposes of this study, relationships within the .10 to .15 range of statistical significance also appear worthy of some discussion, particularly where they indicate an expected trend or pattern. The results section will focus primarily on these "significant" outcomes. Nothing will be reported regarding the Use of Time and Expressive Behavior variables since neither the results of the teacher-reported nor the observed Use of Time analyses were "significant."

## RESULTS AND DISCUSSION

Eight of the eleven variable sets successfully differentiated among teacher belief types. The specific differences generally support expectations.

For example, teachers who score high on student participation (i.e. strategists and democrats) tend to emphasize the type of classroom teaching practices in which students have a greater opportunity to be involved: they emphasize a variety of teaching activities, small group instruction and individualized learning. These teachers report a greater emphasis on the use of individualized student criteria for decision making and de-emphasize curriculum guides and textbooks as influences on their planning. Similarly, teachers who score high on teacher control (i.e. autocrats and strategists) tend to emphasize student conformity over student autonomy and independence as intended learnings for their students and favor the basic skills and intellectual development as schooling goals over personal and social development. As might be expected, the teacher control dimension of the Educational Beliefs Inventory appears to be related to teachers' goals and objectives, but does not necessarily seem to be related to their teaching practices; whereas, the student participation dimension appears to be related to teaching practices but does not appear to be related to teachers' goals and objectives. Furthermore, while autocratic teachers generally appear to be like laissez-faire teachers and democratic teachers generally like strategist teachers, some substantial but well-disguised differences can be noted. These will be discussed later. Based on the discriminant analysis group means, a portrait of four teacher belief types can now be drawn. The results of the eight discriminant analyses and the one chi square analysis on which the following descriptions are based can be found in the appendices (Tables 3-11) along with a profile of the typology (Figure 3).

Autocratic Teacher Belief Types: Control Oriented

The 48 teachers who hold autocratic type beliefs can accurately be characterized as being control oriented. They place a high emphasis on teacher control of student behavior and of the classroom curriculum while de-emphasiz-

ing activities stimulating student participation and involvement. High teacher control is reflected in the tendency for autocratic-type teachers to favor conformity-type behavioral goals for students over independence ones. More than any other group, they say they prefer that students conform to grade level expectations, obey classroom rules and regulations, work independently or quietly, listen to and follow directions and so on in contrast to developing leadership qualities, becoming self-directed or self-motivated and thinking critically, creatively or independently. For these teachers, the classroom curriculum is likely to be defined as "back-to-the-basics." They emphasize intellectual development over personal growth as a school goal as well as a student-intended learning. They emphasize more generalized criteria in their planning and decision making such as formal evaluation procedures (i.e. tests and quizzes) to grade students and predominantly rely on textbooks and commercial materials for planning their teaching. Classroom practices are characterized by the absence of emphasis on activities known to stimulate student participation such as small group instruction, the use of media in teaching a lesson and the provision for individualized instruction. Rather, they emphasize total class lecturing, writing and test-taking in contrast to providing students with a diverse array of learning opportunities. Finally, there is a de-emphasis on student-directed and teacher-student cooperative activities. As predicted, it seems quite clear that authoritarian teachers are very much in control of their classrooms, but that learning opportunities involving group processes and interaction are diminished.

Strategist Teacher Belief Types: Management Oriented

The 45 teachers who hold strategist-type beliefs can accurately be characterized as being management oriented, that is, they appear to maintain a specific task focus while making use of negotiation and compromise. Like

autocrats, strategists also seem to be very much in control of their classrooms, but in contrast to these teachers, they appear to provide more options for learning in terms of the teaching activities utilized. These teachers also prefer the basic subjects and skills emphasis and intellectual development as the primary goal of schooling while de-emphasizing personal development. Strategists strongly emphasize conformity-type behavioral goals for their students. This is their most striking trait. These teachers appear to emphasize about equally generalized and personalized criteria in their curriculum planning and decision making, that is, they tend to be about equally influenced by student background and student preferences in decision making as they are by curriculum guides and information about student past performances. Similarly, they make use of both formal and informal evaluation strategies in grading students. In contrast to autocrats, they stand out as emphasizing infrequently used instructional practices such as class discussions, dramatizations, projects and experiments, and use of media while de-emphasizing lecturing. They are not only above average in individualizing instruction, but they individualize in a variety of ways. They emphasize small group instruction to a greater degree than any other group while de-emphasizing total class instruction thus providing more opportunities for student involvement. They similarly emphasize student-led and student-teacher cooperative activities. Generally speaking, teachers who hold strategist-type beliefs place a high degree of emphasis on teacher control of student behavior (i.e. conformity-type goals) and of the classroom curriculum (i.e. basics and intellectual development is preferred over personal development), as predicted, while also placing a high degree of emphasis on the provision of activities stimulating student participation. As a group they appear to be task-oriented

and organized while at the same time attending to some aspects of group process.

Laissez-faire Belief Type Teachers: Neutrally-Oriented

In contrast to autocrats, the 46 laissez-faire belief type teachers can be characterized as being neutrally-oriented regarding the value they place on teacher control and student participation. While they favor student autonomy and independence as behavioral goals for students, at the same time they support a prescribed curriculum (i.e. emphasizing basics as a general schooling goal and de-emphasizing personal development as a student-intended learning) which appears to be a contradiction. They also appear to be contradictory in favoring independence-type behavioral goals for students while de-emphasizing personal development either as a preferred function of schooling or as a student-intended learning. They tend to neither emphasize nor de-emphasize individualized and generalized criteria in decision making. With autocrats, laissez-faire teachers de-emphasize, however, activities that stimulate greater student participation, particularly in the provision for individualized instruction and in the use of a variety of pedagogical methods. Rather, they tend to emphasize lecturing without the use of media in teaching a lesson. They are also relatively high on teacher monitoring and on the use of noninteractive-type activities (i.e. students silently reading, writing or taking tests). In contrast to autocratic teachers, they tend to moderately emphasize small group over total class instruction. Finally, they moderately emphasize student-directed and student-teacher cooperative activity. It would seem, as predicted, that laissez-faire type teachers are willing to abdicate a portion of teacher control over the teaching-learning process, while at the same time appearing unlikely to provide situations where student participation and responsibility could readily emerge to offer some direction to that process.

For these reasons, it would seem feasible to designate laissez-faire teacher belief types as neutrally-oriented regarding the role of the teacher in the classroom.

Democratic Belief Type Teachers: Participation Oriented

The 43 teachers who hold democratic-type beliefs can accurately be characterized as being participation oriented, that is, they place a low emphasis on teacher control of student behavior and of the classroom curriculum and a high emphasis on providing activities that stimulate student participation. The most striking feature of democratic belief types is the consistency with which they stand out among the other groups as emphasizing personal development over intellectual development both as a general goal of schooling and as a specific student-intended learning or educational objective. Expectedly, they strongly de-emphasize the basics as the most important kind of learnings students should obtain from schooling. It would seem that they do not support a prescribed curriculum. Again, democratic belief type teachers stand out as strongly emphasizing student autonomy and independence in preference to student conformity-type behavioral goals. More than any other group they say they prefer that students develop leadership qualities, become self-directed or self-motivated, think critically, creatively or independently and so on in contrast to conforming to grade level expectations, obeying classroom rules and regulations, working independently or quietly, and listening to and following directions. In planning for teaching and in making curriculum decisions, these teachers stand out once again as preferring individualized to generalized criteria. They emphasize the utilization of student preferences and background as information and as a source of influence on planning and prefer informal (i.e. projects, reports and demonstrations) to formal evaluation procedures to grade students. Like strategists, democratic

belief types, in relation to other groups, highly emphasize infrequently used instructional practices such as class discussions, dramatizations, projects and experiments, and use of media in teaching a lesson while de-emphasizing lecturing. They are not only above average in individualizing instruction, but they individualize in a variety of ways. While democratic types rank high with strategist types in reporting that they emphasize small group instruction over total class, democratic belief types were observed to place only a moderate emphasis on small group instruction. It may be that democrats view themselves as most unlike other teachers (i.e. more deviant) and therefore might feel more inhibited regarding some of their teaching practices in the presence of outside observers. Finally, there is an emphasis on student-directed and teacher-student cooperative activity. As predicted, it seems clear that democratic belief type teachers conduct a less teacher control-oriented classroom than do autocratic and strategist belief types. The curriculum is less prescribed (i.e. de-emphasis on basics, intellectual development, and student conformity; also, less reliance on curriculum guides and textbooks). Furthermore, with strategists, democrats place a high degree of emphasis on the provision of activities stimulating student participation. It would seem, then, that students of democratic teachers would have a greater opportunity to personally participate in the learning process than would students of the other three belief types.

## CONCLUSIONS

The educational beliefs-based typology was predictably related to classroom teaching practices. Autocratic teachers were high on behavioral and curricular control and low on stimulation of group processes. As expected, strategists were high on behavioral and curricular control and on stimulation of group processes as well. Laissez-faire teachers were generally in line with

expectations with de-emphasis on behavioral and curricular control and on stimulation of group processes. Finally, democratic teachers were low on behavioral and curricular control and high on stimulation of group processes, as expected.

One of the most striking aspects of the four profiles which emerged is the general association of the teacher control belief dimension with teachers' preactive behaviors (i.e. goals, intended learning, decision making) and the student participation dimension with teachers' interactive behaviors (i.e. instructional methods, grouping arrangements and leadership behavior). Autocrats and strategists (high on teacher control) were similar in their preactive behaviors, whereas they were dissimilar in their interactive behavior. Likewise, democrats and laissez-faires (high on student participation) were somewhat dissimilar in their preactive behaviors, whereas they were generally similar in their interactive behaviors. Therefore, it would seem that the teacher control dimension of the Educational Beliefs Inventory is generally predictive of teachers' preactive behaviors while the student participation dimension is predictive of their interactive behaviors.

The profiles tend to somewhat disguise the differences between strategists and democrats and between autocrats and laissez-faires teachers. Assuming a direct relationship between teachers' preactive and interactive behaviors, the nature of the teaching practices explored in this study could be vastly different for different belief types while appearing to be similar. It is the combination of high or low teacher control with high or low student participation that identifies the teacher type. While these dimensions are separated for heuristic purposes, in real life they do not operate separately but in conjunction with each other. Thus for example, strategists, while appearing to practice a flexible, wide range of teaching practices may not be

as effective in providing students with broader and deeper educational experiences if they operate out of a limited conceptualization of educational goals and purposes. Likewise, the classrooms of laissez-faire type teachers may lack purpose and direction since it appears that neither teacher not students are "in charge," whereas democrats appear willing to relinquish some control as long as students can be actively involved

While it seems helpful for educational practice to be able to show a relationship between teachers' educational beliefs and their teaching practices, it would be naive to assume that other teacher personality traits might not also contribute to these associations. It may be that needs (Maslow, 1943), levels of achievement motivation (Atkinson and Raynor, 1974) and other personality characteristics are even more highly associated with teaching practices than are beliefs. Likewise, contextual variables such as principal leadership, student characteristics, school climate and other factors may also be related. However, it is the conclusion of this study that educational beliefs do influence teaching practices thereby contributing to the context in which learning occurs. Presumably, other teacher beliefs, especially those having a more direct bearing on classroom processes would also predict an influence on some aspects of classroom learning.[1]

These findings seem important to educational practice in that teachers who reflect on their own classroom behavior and their educational beliefs may find some similarities and some differences in these protraits that may be helpful for understanding more clearly why they conduct their classrooms as they do. Teachers might then be positively challenged to justify their teaching practices in light of their educational beliefs. This would provide a basis for a change in belief or a change in behavior depending on what is viewed as desirable.

## Footnotes

1. The larger study on which this paper is based (Bauch, 1982) examined the relationship between teacher beliefs and their effects specifically on the classroom learning environment as measured by student opinions.

## Appendices

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Table 1

Demographic Characteristics of the 13 Elementary Schools

| School* | Size** | Economic Status | Ethnicity | Location |
|---|---|---|---|---|
| Atwater | Small | Middle | White | Suburban |
| Bradford | Medium | Low/Middle | White | Suburban |
| Crestview | Medium | Low/Middle | White | Suburban |
| Dennison | Very Small | Middle | White | Rural |
| Euclid | Small | Middle | White | Rural |
| Fairfield | Very Large | Low/Middle | Mexican-Am./ White | Rural |
| Laurel | Medium | Low | Black/White | Rural |
| Manchester | Medium | Middle | Black | Urban |
| Newport | Large | Low | Mixed | Urban |
| Palisades | Small | Upper/Middle | Black/White | Urban |
| Rosemont | Medium | Low | Mexican-American | Urban |
| Vista | Large | Middle | White | Suburban |
| Woodlake | Medium | Middle | White | Suburban |

* These are fictitious names

** Very Large = 900 students
Large = 700-900 students
Medium = 500-699 students
Small = 300-499 students
Very Small = 300 students

Table 2

Brief Variable Set Descriptions

| | |
|---|---|
| **Preactive Activities Dimensions** | |
| 1. Goals of Schooling | assesses the extent to which teachers agree that the school should agree that the school and skills, and their choice of the most important function their school should emphasize - social, intellectual, or personal development. |
| 2. Student-Intended Learnings | assesses the emphasis teachers place on academic vs. behavioral goals for their students, and the extent to which conformity-type behavioral goals are emphasized over independence-type goals in the classroom. |
| 3. Teacher Decision Making | assesses how much influence various curriculum sources have on teacher planning (i.e., curriculum guides, textbooks and materials, teacher and student background), the frequency with which teachers use various kinds of information about students in planning individualized instruction (i.e., test results, past and present student behavior and performance), and the extent to which teachers use less formal (i.e., projects, reports, and demonstrations) evaluation procedures with students in contrast to formal ones (i.e., tests, quizzes and classwork). |
| **Interactive Activities Dimensions (Teacher Reported)** | |
| 4. Methods of Instruction | assesses the extent to which teachers use less commonly found instructional practices including materials use (i.e., audio visual and manipulative materials), teaching activities (i.e., class discussions, dramatizations, projects, experiments and interviewing), cognitive learnings (i.e., creative thinking) and evaluation strategies (i.e., projects, reports, and demonstrations), and the extent to which individualized instruction is emphasized. |
| 5. Grouping Arrangements | assesses the extent to which teachers emphasize small group over whole class instruction. |

| | |
|---|---|
| 6. Use of time | assesses the relative amount of time teachers spend on instruction or learning activities in contrast to routines and behavior; also, the amount of time teachers expect students to spend on homework. |

Interactive Activities Dimensions (Observer Reported)

| | |
|---|---|
| 7. Methods of Instruction | assesses the extent to which students spend time in noninteractive-type activities (i.e., reading silently, writing, taking tests); the extent teachers use open-ended questions, lecture, use audio visuals, monitor students, provide students with corrective feedback. |
| 8. Grouping Arrangements | assesses both the type and variety of grouping patterns teachers use (i.e., whole class or small group). |
| 9. Use of Time | assesses the extent to which students have attentive interest in the class lesson and participate in it; also, the proportion of time spent on instruction in contrast to routines and behavior. |

Relationship Dimensions

| | |
|---|---|
| 10. Leadership Behavior | assesses the extent to which students lead or direct classroom activities, teachers work together cooperatively with students, and students initiate verbal interactions. |
| 11. Expressive Behavior | assesses the amount of help, concern, and friendship the teacher directs toward the students and the emotional tone characterizing the classroom - positive, negative, or neutral. |

Table 3

Discriminant Analysis of Goals of Schooling Variables
for Teacher Belief Types
(n = 124)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Basic Subjects and Skills | .91 | -.31 | -.03 |
| Intellectual Development | .46 | .80 | -.36 |
| Personal Development | -.45 | -.57 | -.23 |
| Social Development | -.07 | -.06 | .96 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | .36 | .07 | .04 |
| Strategists | .50 | -.24 | -.02 |
| Laissez-Faires | -.11 | .33 | -.02 |
| Democrats | -.85 | -.16 | .01 |
| Canonical R | .47 | .22 | .03 |
| Canonical $R^2$ | .22 | .05 | .009 |
| Relative Percentage | 84.75% | 15.04% | .02% |
| Significance | .001 | .444 | .961 |

Table 4

Discriminant Analysis of Student-Intended Academic Learnings Variables for Teacher Belief Types
(N = 73)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Personal | -.99 | .02 | -.15 |
| Social | .16 | .88 | .45 |
| Intellectual | .68 | -.70 | -.23 |
| Subject-Specific | .48 | .17 | -.86 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | .19 | -.01 | -.18 |
| Strategists | .34 | .39 | .12 |
| Laissez-Faires | .08 | -.39 | .10 |
| Democrats | -.83 | .12 | .01 |
| Canonical R | .39 | .27 | .13 |
| Canonical $R^2$ | .15 | .07 | .02 |
| Relative Percentage | 64.49% | 29.57% | 5.94% |
| Significance | .033 | .155 | .285 |

Table 5

Distribution of Student-Intended Behavioral Learnings Variables Among Teacher Belief Types

| Teacher Belief Types | | Type of Behavioral Goal | | | |
|---|---|---|---|---|---|
| | | Conformity | Mixed | Independence | Total |
| Autocrats | N = | 8 | 5 | 5 | 18 |
| | Row % | (44) | (28) | (28) | (30) |
| Strategists | | 5 | 4 | 1 | 10 |
| | | (50) | (40) | (10) | (16) |
| Laissez-Faires | | 2 | 10 | 6 | 18 |
| | | (11) | (56) | (33) | (30) |
| Democrats | | 3 | 2 | 10 | 15 |
| | | (20) | (13) | (67) | (25) |
| Column Totals: | N = | 18 | 21 | 22 | 61 |
| | Row % | (30) | (34) | (36) | (100) |

$x^2 = 16.0608$, $p < .01$ (6 df)

Table 6

Discriminant Analysis of Teacher Decision Making Variables
for Teacher Belief Types
(n = 124)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Student Preferences as Information | .56 | .17 | .41 |
| Informal Evaluation Strategies | .52 | .18 | -.28 |
| Student Background as an Influence | .49 | .17 | .08 |
| Curriculum Guides as Influences | -.02 | .62 | .06 |
| Formal Evaluation Strategies | -.33 | .59 | -.17 |
| Information about Student Past Performance/Behavior | .12 | .54 | .08 |
| Textbooks and Materials as Influences | -.26 | .31 | .18 |
| Test Results as Information | .10 | .27 | -.17 |
| Teacher Background as an Influence | .16 | .11 | .58 |
| Information about Present Student Performance/Behavior | -.02 | -.12 | .47 |
| **Teacher Belief Types** | **Group Centroids** | | |
| Autocrats | -.74 | -.14 | .21 |
| Strategists | .36 | .71 | .06 |
| Laissez-Faires | -.31 | -.06 | -.34 |
| Democrats | .81 | -.47 | .06 |
| Canonical R | .52 | .40 | .20 |
| Canonical $R^2$ | .27 | .16 | .04 |
| Relative Percentage | 62.02% | 30.84% | 7.14% |
| Significance | .001 | .14 | .77 |

Table 7

Discriminant Analysis of Methods of Instruction (Teacher Report) Variables for Teacher Belief Types (n = 119)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Use of Uncommon Pedagogical Methods | .85 | -.37 | .39 |
| Variety in Individualizing Instruction | .75 | .40 | -.53 |
| Percentage of Individualization Time | .53 | .84 | .09 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | -.54 | .10 | -.07 |
| Strategists | .54 | -.12 | -.05 |
| Laissez-Faires | -.47 | -.12 | .07 |
| Democrats | .45 | .15 | .06 |
| Canonical R | .46 | .13 | .06 |
| Canonical $R^2$ | .21 | .02 | .00 |
| Relative Percentage | 92.84% | 5.76% | 1.40% |
| Significance | .001 | .683 | .503 |

Table 8

Discriminant Analysis of Grouping Arrangements (Teacher Report) Variables for Teacher Belief Types
(n = 125)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Small Group Learning | .96 | .14 | .23 |
| Whole Class Learning | -.29 | .95 | .13 |
| Independent Learning | -.02 | -.17 | .99 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | -.57 | -.03 | .03 |
| Strategists | .32 | .32 | .01 |
| Laissez-Faires | -.17 | -.03 | -.06 |
| Democrats | .54 | -.25 | .02 |
| Canonical R | .41 | .20 | .04 |
| Canonical $R^2$ | .17 | .04 | .00 |
| Relative Percentage | 82.50% | 16.94% | .56% |
| Significance | .002 | .295 | .688 |

Table 9

Discriminant Analysis of Methods of Instruction (Observer Report) Variables for Teacher Belief Types (n = 80)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Utilization of Media | .78 | .10 | .21 |
| Lecturing/Explaining | -.52 | .51 | .20 |
| Noninteractive Activities | -.29 | .29 | -.07 |
| Corrective Feedback | .32 | .32 | .02 |
| Teacher Monitoring | -.43 | -.31 | .62 |
| Open-Ended Questioning | .34 | .24 | .57 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | -.35 | -.36 | .04 |
| Strategists | .59 | .05 | .32 |
| Laissez-Faires | -.43 | .40 | .00 |
| Democrats | .44 | -.01 | -.44 |
| Canonical R | .42 | .28 | .25 |
| Canonical $R^2$ | .18 | .08 | .06 |
| Relative Percentage | 58.21% | 23.90% | 17.89% |
| Significance | .121 | .367 | .321 |

Table 10

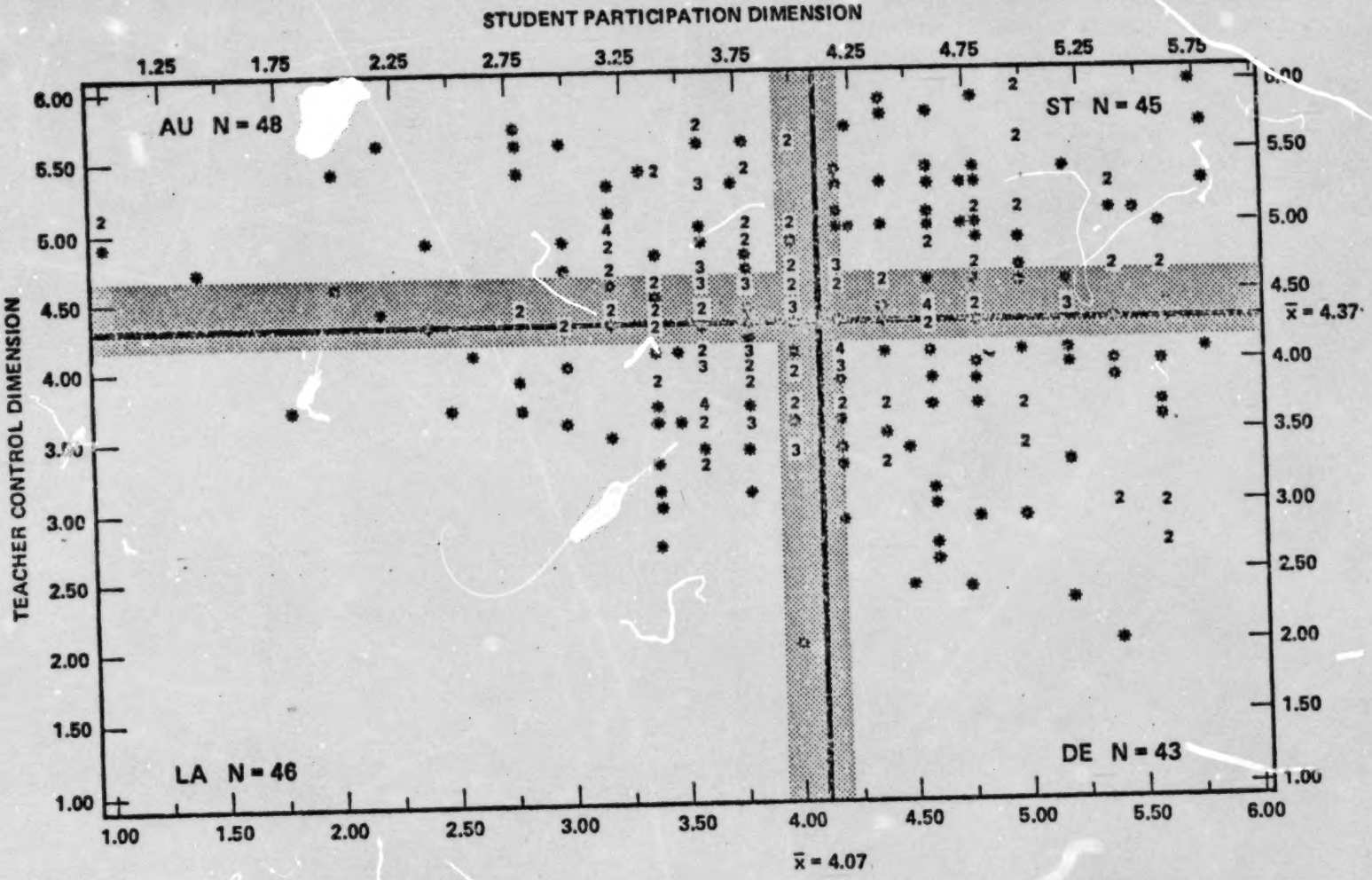
Discriminant Analysis of Grouping Arrangements (Observer Report) Variables for Teacher Belief Types (n = 80)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Small Groups | .90 | -.23 | .37 |
| Variety in Grouping | .72 | -.03 | -.27 |
| Total Class Grouping | -.55 | .41 | .52 |
| Independent Group | .63 | .24 | -.64 |
| Teacher Belief Types | Group Centroids | | |
| Autocrats | -.48 | -.24 | -.00 |
| Strategists | .99 | -.09 | .00 |
| Laissez-Faires | -.20 | .19 | .02 |
| Democrats | -.1[illegible] | .22 | -.02 |
| Canonical R | .49 | .20 | .02 |
| Canonical $R^2$ | .24 | .04 | .00 |
| Relative Percentage | 88.67% | 11.27% | 0.06% |
| Significance | .022 | .810 | .99 |

Table 11

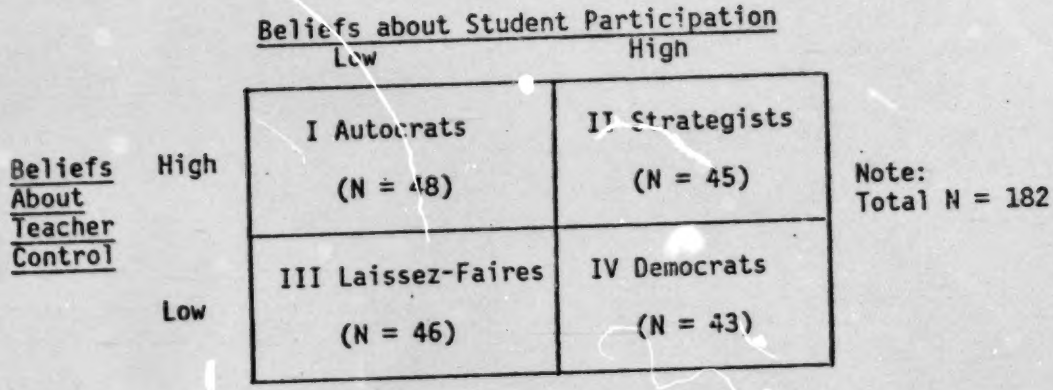
Discriminant Analysis of Classroom Leadership Variables for Teacher Belief Types (n = 80)

| Discriminating Variables | Correlations Between Canonical Discriminant Functions and Discriminating Variables | | |
|---|---|---|---|
| Functions: | 1 | 2 | 3 |
| Student-Directed Activity | .79 | -.50 | .35 |
| Student-Initiated Interaction | .36 | .74 | .57 |
| Teacher-Student Cooperative Activity | .67 | .03 | -.74 |
| Teacher Belief Type: | Group Centroids | | |
| Autocrats | -.55 | -.05 | -.01 |
| Strategists | .57 | -.19 | -.01 |
| Laissez-Faires | -.07 | .02 | .03 |
| Democrats | .31 | .26 | -.01 |
| Canonical R | .41 | .15 | .02 |
| Canonical $R^2$ | .17 | .02 | .00 |
| Relative Percentage | 89.05% | 10.76% | .19% |
| Significance | .080 | .770 | .859 |



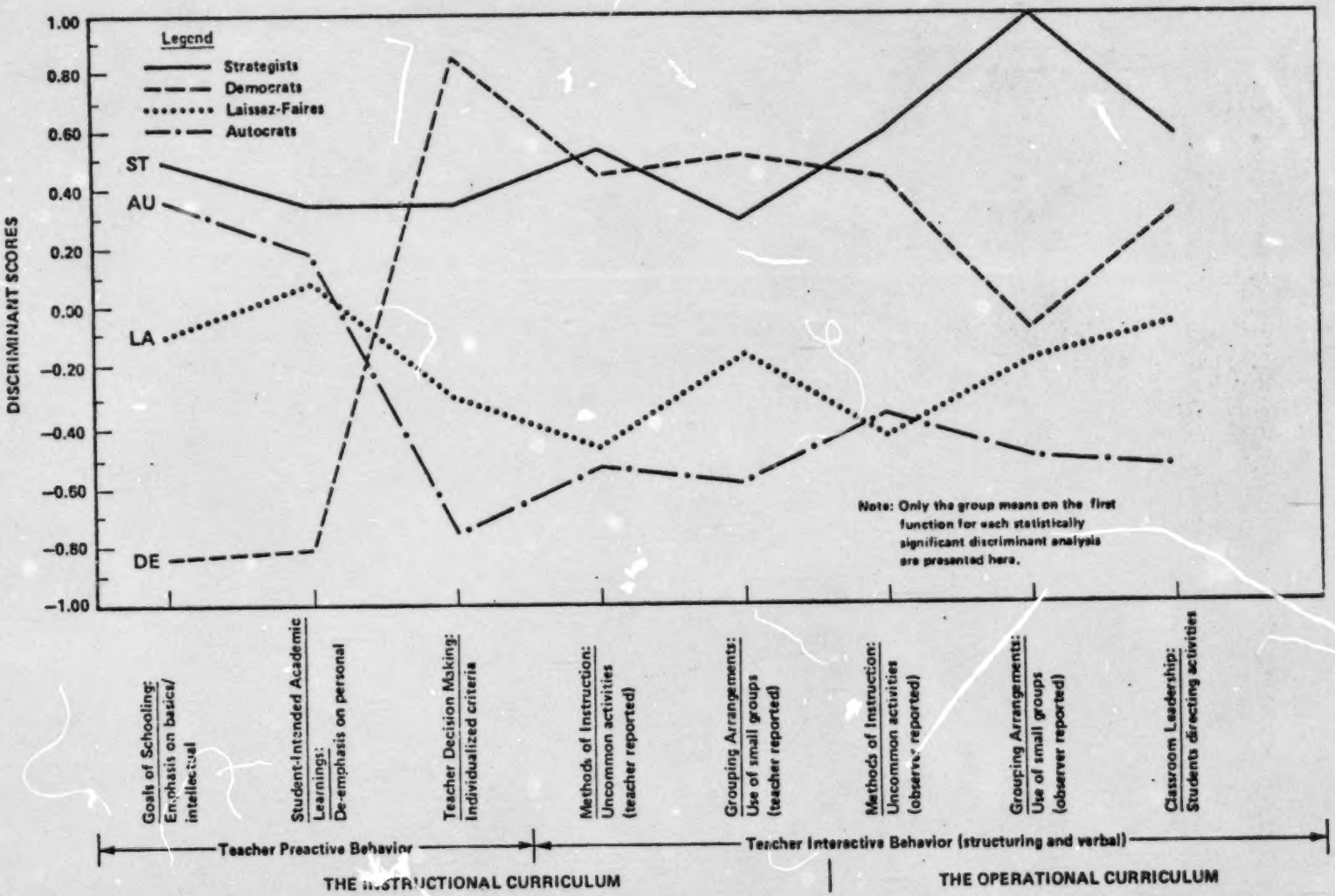

Scattergram of Teacher Control and Student Participation Scores

Figure 1




Typology of Teacher Belief Types with Case Distribution for 182 Elementary Teachers

Figure 2




Profile of a Typology of Teacher Educational Beliefs and Elementary Classroom Processes







Figure 3

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